April 2001

MAINTENANCE BULLETIN

Alfa Company

No. 168

Construction Battalion Center
1000 23 rd Avenue
Building 1000
Port Hueneme, CA. 93043-4410

Dimler Chrysler Corporation Models:

Dodge Caravan/Grand Caravan **Years:** 1996-2000
Plymouth Voyager/Grand Voyager **Years:** 1996-2000
Chrysler Town and Country **Years:** 1996-2000

Number Involved: 1,163,000

Dates of Manufacture: February 1995 - September 1999

Defect: On certain minivans built with 3.3L and 3.8L engines, the fuel injection delivery system can leak fuel from some of the sealing O-rings in the fuel injection rail. Fuel leakage in the presence of an ignition source can result in a fire.

Remedy: Dealers will install a seal on the vehicle fuel rails to prevent external leakage of fuel from the fuel rail crossover tube, should the existing O-rings continue to degrade. DaimlerChrysler has not yet provided NHTSA with an owner notification schedule. However, if a vehicle is leaking fuel from the O-rings or from a cracked fuel line, the vehicle should be taken into a dealer to have this repaired as soon as possible. Owners who do not receive the free remedy within a reasonable time should contact DaimlerChrysler at 1-800-992-1997.

[NHTSA Recall No. 00V268/DaimlerChrysler Recall No. 895]

Ford Motor Company Models:

Ford Windstar **Year:** 2001
Ford Crown Victoria **Year:** 2001
Lincoln Town Car **Year:** 2001
Mercury Grand Marquis **Year:** 2001

Number Involved: 18,500

Dates of Manufacture: March - September 2000

Defect: Certain passenger vehicles and minivans were built with a newly designed restraint control module (RCM). In some cases, the RCM does not recognize certain system faults that could result in an air bag or seat belt pre-tensioner unexpectedly activating during the self-test sequence at vehicle start-up. This condition could result in personal injury.

Remedy: Dealers will replace the RCM in these vehicles. The manufacturer has reported that owner notification began Oct. 2, 2000. Owners who do not receive the free remedy within a reasonable time should contact Ford at 1-800-392-3673.

[NHTSA Recall No. 00V270/Ford Recall No. 00S26]

Ford Motor Company Models:

Ford F150 **Year:** 1997
Ford F250 **Year:** 1997

Number Involved: 670,509

Dates of Manufacture: November 1995 - August 1997

Defect: On light duty pickup trucks, the front fuel line assembly could have a hole rubbed through from improper installation of the mounting brackets. Also, in vehicles equipped with a manual 4x4 transfer case shifter, the shifter linkage may contact the steel fuel lines during shifting between 4H, 4L, 2L and Neutral. These conditions could result in fuel leakage. Fuel leakage in the presence of an ignition source, could result in a fire.

Remedy: Dealers will inspect these lines and replace the front fuel line assembly if necessary. The manufacturer has reported that owner notification was expected to begin during September 2000. Owners who do not receive the free remedy within a reasonable time should contact Ford at 1-800-392-3673.

[NHTSA Recall No. 00V231/Ford Recall No. 00S22]

General Motors Corporation Models:

GMC Sonoma **Year:** 2000
Chevrolet S10 **Year:** 2000
Oldsmobile Bravada **Year:** 2000

Number Involved: 223,194

Dates of Manufacture: March - November 1999

Defect: Certain light duty pickup trucks and sport utility vehicles were built with incorrect payload information on the vehicle certification label. The payload shown on the label is greater than the maximum validated payload. If the vehicle is loaded to the incorrectly labeled payload, it may not ride and handle in the manner that the driver expects. This could result in a loss of control of the vehicle or an inability to stop the vehicle within expected stopping distances.

Remedy: Owners will be sent a new label for installation on the driver's door of the vehicle. The manufacturer has reported that owner notification began Oct. 18, 2000. Owners who do not receive the free label within a reasonable time should contact GMC at 1-800-462-8782, Chevrolet at 1-800-222-1020, or Oldsmobile at 1-800-442-6537.

[NHTSA Recall No. 00V258001/GM Recall No. 00063]

General Motors Corporation Models:

Chevrolet Blazer **Year:** 2000
Chevrolet S10/T10 **Year:** 2000
GMC Jimmy **Year:** 2000

Number Involved: 156,305

Dates of Manufacture: April - May 2000

Noncompliance: Certain passenger vehicles, light duty pickup trucks, sport utility vehicles, and mini vans equipped with TRW seat belt buckle assemblies fail to conform to the requirements of Federal Motor Vehicle Safety Standard No. 209, "Seat Belt Assemblies." The buckle base of these seat belt assemblies were not properly heat treated and do not pass the load bearing requirement of the standard. In the event of a vehicle crash, the occupant may not be properly restrained.

Remedy: Dealers will inspect the vehicle's rear safety belt buckle assembly date codes and, if necessary, will replace any rear safety belt buckle assembly. The manufacturer has reported that owner notification was to begin during September 2000. Owners who do not receive the free remedy within a reasonable time should contact; Chevrolet at 1-800-222-1020; GMC at 1-800-462-8782,

[NHTSA Recall No. 00V228003/GM Recall No. 00067]

MEDIUM/HEAVY DUTY TRUCKS, SCHOOL BUSES AND MOTOR HOMES

Blue Bird Body Company Models:

Blue Bird All American **Years:** 1998-2000
Blue Bird TC2000 **Years:** 1998-2000

Number Involved: 10,918

Dates of Manufacture: January 1998 - August 2000

Defect: On certain school and transit buses built with Bendix air antilock brake systems (ABS) with an EC-17 1030R electronic control unit (ECU), there have been reports of unwanted ABS activation at low speeds caused by (1) chafed ABS wheel speed sensor wires on rotating parts or (2) a damaged component at the wheel end that generates a certain type of erratic sensor signal. This condition could cause the ABS ECU to exhaust the air at the air brake modulators for one or more of the wheels. This could result in extended braking distances and a possible crash.

Remedy: Dealers will replace the ABS ECU. The manufacturer has reported that owner notification began Sept. 28, 2000. Owners who do not receive the free remedy within a reasonable time should contact Blue Bird at 1-912-825-2021

[NHTSA Recall No. 00V232005/Blue Bird Recall No. R00EE]

Blue Bird Body Company Models:

Blue Bird All American **Years:** 1999-2000

Number Involved: 175

Dates of Manufacture: May 1999 - July 2000

Defect: On certain school and transit buses equipped with Cummins ISC engines, the wiring harness to the combustion air intake grid heater can chafe against the engine and wear through. This condition can cause an electrical short in the grid heater power supply possibly resulting in a fire.

Remedy: Owners will be advised to re-route the original grid heater power supply harness. In addition, a clamp will be added to support the harness away from the engine components. The manufacturer has reported that owner notification began August 24, 2000. Owners who do not receive the free remedy within a reasonable time should contact Blue Bird at 1-912-825-2021.

[NHTSA Recall No. 00V209/Blue Bird Recall No. R00DZ]

Blue Bird Body Company Models:

Blue Bird TC2000 **Years:** 1993-1999
Blue Bird Conventional **Years:** 1993-1999
Blue Bird Mini Bird **Years:** 1993-1999

Number Involved: 25,839

Dates of Manufacture: May 1999 - July 2000

Noncompliance: Certain school buses fail to meet the 60 percent joint strength requirements of FMVSS No. 221, "School Bus Body Joint Strength." In the event of a vehicle crash, the roof may not be supported sufficiently, causing personal injury to bus occupants.

Remedy: Owners will be contacted and advised to inspect each roof joint. Owners will install repair rivets in each joint found to have insufficient quantity of rivets in each examined 8-inch section. The manufacturer has reported that owner notification was expected to begin during September 2000. Owners who do not receive the free remedy within a reasonable time should contact Blue Bird at 1-912-825-2021.

[NHTSA Recall No. 00V219/Blue Bird Recall No. R00DN]

Blue Bird Body Company Models:

Blue Bird All American **Years:** 1999-2000
Blue Bird TC2000 **Years:** 1999-2000
Blue Bird Q-Bus **Years:** 1999-2000
Blue Bird Commercial Series **Years:** 1999-2000

Number Involved: 6,914

Dates of Manufacture: February 1999 - August 2000

Defect: On certain school and transit buses equipped with electronic engines and Felsted electronic accelerator pedals, the return springs can break on the accelerator pedals that are equipped with stainless steel or electroplated music wire return springs. If both return springs fail, the throttle would not return to the idle position as intended resulting in a stuck throttle. A stuck throttle could result in a crash.

Remedy: Replacement accelerator pedals equipped with return springs manufactured of music wire with one additional coil on each spring and with an organic coating, eliminating electroplating will be installed. The manufacturer has reported that owner notification was expected to begin during September 2000. Owners who do not receive the free remedy within a reasonable time should contact Blue Bird at 1-912-825-2021.

[NHTSA Recall No. 00V230001/Blue Bird Recall No. R00EA]

Blue Bird Body Company Models:

Blue Bird All American **Years:** 1999-2000

Number Involved: 1,581

Dates of Manufacture: February 1999 - August 2000

Defect: Certain school and transit buses have improperly installed or missing pinch bolts in the steering shaft assemblies. This can result in disengagement of the steering slip shaft assembly and loss of steering.

Remedy: Owners will be provided with installation instructions and new replacement bolts and locking nuts for the steering shaft assemblies. The manufacturer has reported that owner notification was expected to begin during September 2000. Owners who do not receive the free remedy within a reasonable time should contact Blue Bird at 1-912-825-2021.

[NHTSA Recall No. 00V245/Blue Bird Recall No. R00EF]

General Motors Corporation Models:

Chevrolet B7 **Years:** 1998-2001
Chevrolet C6 **Years:** 1998-2001
Chevrolet C7 **Years:** 1998-2001
Chevrolet F6 **Years:** 1998-2001
Chevrolet F7 **Years:** 1998-2001
GMC B7 **Years:** 1998-2001
GMC C6 **Years:** 1998-2001
GMC C7 **Years:** 1998-2001
GMC F6 **Years:** 1998-2001
GMC F7 **Years:** 1998-2001

Number Involved: 30,000

Dates of Manufacture: May 1997 - August 2000

Defect: On certain school buses, medium duty trucks, and tractors built with Bendix air antilock brake systems (ABS) with an EC-17 1030R electronic control unit (ECU), there have been reports of unwanted ABS activation at low speeds caused by (1) chafed ABS wheel speed sensor wires on rotating parts or (2) a damaged component at the wheel end that generates a certain type of erratic sensor signal. This condition could cause the ABS ECU to exhaust the air at the air brake modulators for one or more of the wheels, resulting in increased braking distances. This could lead to a crash.

Remedy: Dealers will replace the ABS ECU. The manufacturer has reported that owner notification was to begin during October 2000 for the B7 series school buses and later when the parts become available for the medium duty trucks and tractors. Owners who do not receive the free remedy within a reasonable time should contact GMC at 1-800-462-8782 or Chevrolet at 1-800-222-1020.

[NHTSA Recall No. 00V232008/GM Recall No. 00078]

Freightliner Corporation Models:

Freightliner XC **Years:** 1997-2000

Number Involved: 5,032

Dates of Manufacture: December 1997 - August 2000

Defect: On certain chasses built with Caterpillar engines and equipped with Felsted electronic accelerator pedals, the return springs can break on the accelerator pedals that are equipped with stainless steel or electroplated wire return springs. If both return springs fail, the throttle

would not return to the idle position as intended, resulting in a stuck throttle. A stuck throttle could result in a crash.

Remedy: Replacement accelerator pedals equipped with return springs manufactured of music wire with one additional coil on each spring and with an organic coating, eliminating electroplating, will be installed. The manufacturer has reported that owner notification began Oct. 11, 2000. Owners who do not receive the free remedy within a reasonable time should contact Freightliner at 1-800-547-0712.

[NHTSA Recall No. 00V230002/Freightliner Recall No. FL-271]

Freightliner Corporation Models:

Freightliner FS-65 **Year:** 1999
Freightliner MC **Year:** 1999
Freightliner FLN **Year:** 1999
Freightliner MB **Year:** 1999
Freightliner FB65 **Year:** 1999
Freightliner MT **Year:** 1999
Thomas MVP EF **Year:** 1999

Number Involved: 10,460

Dates of Manufacture: March - January 2000 (Thomas ending date is May 2000)

Defect: Certain shuttle buses, recreational vehicles, utility vans, and heavy duty trucks equipped with the Meritor WABCO Phase 1, D-version Antilock Brake System (ABS), fail to comply to the requirements of FMVSS No. 105, "Hydraulic and Electric Brake Systems." An internal diagnostic system in the ABS may not detect an extreme wheel speed sensor air gap. Such a condition could possibly occur during (1) original assembly or (2) subsequent wheel end service. An extreme wheel speed sensor air gap that affects the generation of a response signal may not be detected and thus the indicator lamp may not activate.

Remedy: Dealers will remove and replace the ABS ECU on buses and multi-passenger vehicles and reprogram the ECU for all others. The manufacturer has reported that owner notification is expected to begin during December 2000. Owners who do not receive the free remedy within a reasonable time should contact Freightliner at 1-800-547-0712.

[NHTSA Recall No. 00V279001/Freightliner Recall No. FL-264]

Freightliner Corporation Models:

Freightliner FLD **Years:** 1997-2000
Freightliner Century **Years:** 1997-2000
Freightliner Business Class **Years:** 1997-2000
Freightliner Columbia **Years:** 1997-2000
Freightliner Argosy **Years:** 1997-2000
Freightliner FS-65 **Years:** 1997-2000
Freightliner FLS 112 **Years:** 1997-2000
Freightliner Sterling **Years:** 1997-2000
Sterling Acterra **Years:** 1997-2000
Thomas ER Transit **Years:** 1997-2000
Thomas MVP EF **Years:** 1997-2000
Thomas MVP ER **Years:** 1997-2000

Number Involved: 51,000

Dates of Manufacture: February 1998 - August 2000

Defect: On certain buses and heavy duty trucks built with Bendix air ABS with an EC-17 1030R electronic control unit (ECU), there have been reports of unwanted temporary ABS activation at low speeds caused by 1) chafed ABS wheel speed sensor wires on rotating parts or 2) a damaged component at the wheel end that generates a certain type of erratic sensor signal. This condition could cause the air ABS ECU to exhaust the air at the air brake modulators for one or more of the wheels, resulting in increased braking distances. This could lead to a crash.

Remedy: Dealers will replace the ABS ECU. The manufacturer has reported that owner notification began Aug. 29, 2000. Owners who do not receive the free remedy within a reasonable time should contact Freightliner at 1-800-547-0712.

[NHTSA Recall No. 00V232002/Freightliner Recall No. FL-266]

Freightliner Corporation Models:

Sterling Acterra **Year:** 1999
Sterling Truck **Year:** 1999
Freightliner FLD **Year:** 1999
Freightliner FLN **Year:** 1999
Freightliner Argosy **Year:** 1999
Freightliner MT45 **Year:** 1999
Freightliner MT55 **Year:** 1999
Freightliner Century **Year:** 1999

Number Involved: 45,000

Dates of Manufacture: July - October 1999

Defect: On certain heavy duty trucks equipped with TRW tie rod ends on certain Meritor axles, the tie rod and drag link ball stud ends contain bearings that are below the specified case depth and/or hardness. This can lead to premature wear with possible separation of the ball stud from the socket, increasing the risk of loss of control of the vehicle and a crash.

Remedy: Dealers will remove and replace all affected tie rods and drag links with different designed ends. The manufacturer has reported that owner notification was expected to begin during October 2000. Owners who do not receive the free remedy within a reasonable time should contact Freightliner at 1-800-547-0712.

[NHTSA Recall No. 00V246001/Freightliner Recall No. FL-268

International Truck and Engine Corporation Models:

International 5000 **Years:** 1998-2000
International 9000 **Years:** 1998-2000

Number Involved: 28,010

Dates of Manufacture: July 1998 - July 2000

Defect: On certain heavy-duty trucks, the brake light switch and the cruise control switch are mounted in such a way as to allow moisture within the air brake system to collect inside the switches. If the moisture in the switches freezes, the brake lights may not function and the cruise control might not disengage when the brake pedal is depressed. If the switches freeze, there could be no brake lights to warn following vehicles and an extended stopping distance if the cruise control does not disengage as expected when the brake pedal is pressed, extending stopping distances increasing the risk of a crash.

Remedy: Dealers re-mount the air manifold and switches to a proven, trouble-free orientation. The manufacturer has reported that owner notification began Aug. 21, 2000. Owners who do not receive the free remedy within a reasonable time should contact International at 1-800-448-7825.

[NHTSA Recall No. 00V206/International Recall No. 00506]

International Truck and Engine Corporation Models:

International 2000 **Years:** 1998-2000
International 3000 **Years:** 1998-2000
International 4000 **Years:** 1998-2000
International 5000 **Years:** 1998-2000
International 8000 **Years:** 1998-2000
International 9000 **Years:** 1998-2000

Number Involved: 165,092

Dates of Manufacture: March 1998 - July 2000

Defect: On certain buses and heavy duty trucks built with Bendix air ABS with an EC-17 1030R electronic control unit (ECU), there have been reports of unwanted temporary ABS activation at low speeds caused by 1) chafed ABS wheel speed sensor wires on rotating parts or 2) a damaged component at the wheel end that generates a certain type of erratic sensor signal. This condition could cause the air ABS ECU to exhaust the air at the air brake modulators for one or more of the wheels, resulting in increased braking distances and increasing the risk of a crash.

Remedy: Dealers will replace the ABS ECU. The manufacturer has reported that owner notification began Sept. 25, 2000. Owners who do not receive the free remedy within a reasonable time should contact International at 1-800-448-7825.

[NHTSA Recall No. 00V232001/International Recall No. 00507]

SUBJECT: SAFETY OF USE MESSAGE (SOUM), TACOM CONTROL NO. SOUM-01-006 "OPERATIONAL" ESTABLISHING NON-MISSION CAPABLE STATUS (NMCS) FOR THE SPEEDOMETER GAGE USED ON M939/M939A1/M939A2 FOV. AFFECTED ARE: TRUCKS, CARGO, DROP SIDES, WO/WINCH M923 (2320-01-050-2084), M923A1 (2320-01-206-4087), M923A2 (2320-01-230-0307), LIN: X40794. TRUCKS, CARGO, DROP SIDES W/WINCH M925 (2320-01-047-8769), M925A1 (2320-01-206-4088), M925A2 (2320-01-230-0308), LIN: X40931. TRUCKS, CARGO, XLONG WHEEL BASE, WO/WINCH M927 (2320-01-047-8771), M927A1 (2320-01-206-4089, M927A2 (2320-01-230-0309), LIN: X41105. TRUCKS, CARGO, XLONG WHEEL BASE, W/WINCH M928 (2320-01-047-8770), M928A1 (2320-01-206-4090), M928A2 (2320-01-230-0310), LIN: X43845. TRUCKS, DUMP, WO/WINCH, M929 (2320-01-047-8756), M929A1 (2320-01-206-4079), M929A2 (2320-01-230-0305), LIN: X43708. TRUCKS, DUMP, W/WINCH, M930 (2320-01-047-8755), M930A1 (2320-01-206-4080, M930A2

(2320-01-230-0306), LIN: X43845. TRUCKS, TRACTOR, WO/WINCH, M931 (2320-01-047-8753), M931A1 (2320-01-206-4077), M931A2 (2320-01-230-0302), LIN: X59326. TRUCKS, TRACTOR, W/WINCH, M932 (2320-01-047-8752), M932A1 (2320-01-205-2684), M932A2 (2320-01-230-0303), LIN: X59463. TRUCKS, VAN, EXPANSIBLE, M934 (2320-01-047-8750), M934A1 (2320-01-205-2682), M934A2 (2320-01-230-0300), LIN: X62237. TRUCKS, MEDIUM WRECKER, M936 (2320-01-047-8754), M936A1 (2320-01-206-4078), M936A2 (2320-01-230-0304), LIN: X63299. TRUCK, CHASSIS, M942 (2320-01-047-8745), M942A1 (2320-01-205-2666), M942A2 (2320-01-230-0287), TRUCK, CHASSIS, M944A1 (2320-01-205-2667), M944A2 (2320-01-230-0288). TRUCK, CHASSIS, M945 (2320-01-050-4894), M945A1 (2320-01-205-2668), M945A2 (2320-01-230-3261), LIN (BRIDGER): X48216

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D       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX D
 A      X                   "WARNING"                          X  A
  N     X DEATH OR SERIOUS INJURY TO SOLDIERS, OR DAMAGE       X   N
   G    X TO ARMY EQUIPMENT WILL OCCUR IF THE INSTRUCTIONS     X    G
    E   X IN THIS MESSAGE ARE NOT FOLLOWED.                    X     E
     R  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX       R
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1. DISTRIBUTION:

A. THIS IS AN OPERATIONAL SAFETY OF USE MESSAGE. MACOM COMMANDERS WILL RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE COMMANDS/ACTIVITIES WITHIN 24 HOURS OF RECEIPT OF THIS MESSAGE AND ACKNOWLEDGE RECEIPT OF THIS MESSAGE WITHIN FIVE WORKING DAYS TO: CDRTACOM, WARREN MI //AMSTA-LC-CIPWM//DSN 786-6096, COMMERCIAL (810) 574-6096 OR DDN ADDRESS: SAFETYOFUSE@TACOM.ARMY.MIL.

B. MACOM COMMANDERS WILL ALSO TRACK AND REPORT COMPLIANCE OF THIS MESSAGE FOR ALL SUBORDINATE COMMANDS/ACTIVITIES TO: MR. DENNIS WARD, TEAM LEADER, MEDIUM TRUCKS GROUP, 5-TON TEAM C/O CMDR, USATACOM, AMSTA-LC-CHM, WARREN, MI 48397-5000 OR AT WARDD@TACOM.ARMY.MIL.

2. REFERENCE:

A. OPERATIONAL SAFETY OF USE MESSAGE, TACOM CONTROL NUMBER 98-07, 081917Z APR 98, SAFE OPERATING SPEEDS FOR M939 SERIES TRUCKS. SOUM PRESCRIBED MAXIMUM SAFE OPERATING SPEEDS AT 40MPH AND OUTLINED SAFE DRIVER/OPERATOR PRACTICES.

B. GROUND PRECAUTIONARY MESSAGE (GPM), TACOM CONTROL NUMBER 96-04, 131807Z DEC 95, SAFE OPERATING SPEEDS FOR M939 FAMILY OF VEHICLES.

C. OPERATIONAL SAFETY OF USE MESSAGE, TACOM CONTROL NUMBER SOUM-00-018 FOR "RESUMPTION OF SAFE OPERATING SPEEDS FOR M939 FAMILY OF VEHICLES FOLLOWING RETROFIT OF ANTI-LOCK BRAKE SYSTEM (ABS).

D. TM-9-2320-272-10, DTD 15 AUG 1996 W/CHANGE 1 DTD 22 FEB 1999, PAGE 2-53, TABLE 2-3, PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR MODELS M939/A1/A2, CHECK #19, DURING: GAGES.

E. TB 43-0001-62-1, DTD 1 JANUARY 2001 - 31 MARCH 2001, EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE DIGEST FOR TACTICAL TRUCKS (PENDING).

3. PROBLEM: REFERENCES 2A AND 2B ESTABLISHED SAFE OPERATING SPEEDS FOR M939 SERIES TRUCKS AT 40 MILES PER HOUR. REFERENCE 2C RESUMES NORMAL OPERATING SPEED AFTER APPLICATION OF ANTI-LOCK BRAKE SYSTEM (ABS). RELEVANT TO APPLICATION OF THESE MESSAGES, M939 FOV'S CURRENT TM (REFERENCE 2D) PROVIDES NO NON-MISSION CAPABLE (NMC) CRITERIA FOR OPERATION OF M939 SERIES TRUCKS WITH DEFECTIVE SPEEDOMETERS. THIS GAGE IS ESSENTIAL TO MONITOR AND CONTROL VEHICLE SPEED IN GENERAL AS WELL AS TO BETTER IMPLEMENT TRUCK OPERATIONS UNDER THE PRIOR SOUM AND GPM RESTRICTIONS. THIS SAFETY OF USE MESSAGE, THEREFORE, CORRECTS THE TM OMISSION BY SETTING FORTH A PMCS INSPECTION REQUIREMENT AND READINESS CRITERIA FOR ALL M939 FOV.

4. USER ACTIONS:

A. EFFECTIVE IMMEDIATELY, USERS WILL INSERT THE FOLLOWING GUIDANCE IN THE "NOT FULLY MISSION CAPABLE IF" COLUMN OF TM REFERENCE 2D, PAGE 2-53, PMCS CHECK #19, DURING OPERATION: "GAGES - SPEEDOMETER/ODOMETER IS INOPERATIVE. REPORT VEHICLE IMMEDIATELY TO UNIT MAINTENANCE IF SPEEDOMETER NEEDLE DOES NOT MOVE, JERKS UNEVENLY DURING SUSTAINED SPEEDS, OR APPEARS STUCK."

B. UNIT COMMANDERS, CONTACT YOUR LOCAL TACOM LOGISTICS ASSISTANCE REPRESENTATIVE (LAR) OR YOUR STATE SURFACE MAINTENANCE MANAGER UPON RECEIPT OF THIS MESSAGE FOR ASSISTANCE. FOR ASSISTANCE IN LOCATING YOUR TACOM LAR, SEE PARAGRAPH 6D.

5. TACOM/PM ACTIONS:

A. TM 9-2320-272-10 (REF 2D) IS BEING CHANGED TO INCORPORATE THE ABOVE NMCS CRITERIA. THIS CHANGE IS SCHEDULED FOR RELEASE IN JUNE 2001.

B. TB 43-0001-62-1 (REF 2E) WILL INCLUDE THE ABOVE PMCS READINESS CRITERIA FOR WORLDWIDE DISTRIBUTION. THIS TB IS SCHEDULED FOR PUBLICATION 2QFY01.

6. POINTS OF CONTACT ARE:

A. MR. FLOYD BURNS, MAINTENANCE SYSTEM MANAGER, DSN 786-5703, COMMERCIAL (810) 574-5703 OR E:MAIL BURNSF@TACOM.ARMY.MIL

B. MR. WINFRED HAWKINS, M939 LOGISTICS MANAGER, DSN 786-5937, COMMERCIAL (810) 574-5937 OR E:MAIL HAWKINSW@TACOM.ARMY.MIL

C. MR. JOHN SZAFRANSKI, ENGINEERING (TEAM TRUCKS), DSN 786-7833, COMMERCIAL (810 574-7833 OR E: MAIL SZAFRANSKIJ@TACOM.ARMY.MIL

D. TO FIND YOUR LOCAL LAR, LOG ONTO THE ARMY ELECTRONIC PRODUCT SUPPORT WEB SITE AT HTTPS://AEPS.RIA.ARMY.MIL. ONCE LOGGED INTO THE AEPS SITE, SELECT THE LAR LOCATOR SERVICE, THEN SELECT THE APPROPRIATE REGION, I.E.: CONUS, USAREUR, FAR EAST, KUWAIT, SELECT THE LOCATION NEAREST YOU AND CLICK ON A NAME. THIS WILL GIVE YOU A LAR'S NAME, DSN, AND COMMERCIAL PHONE NUMBER, EMAIL ADDRESS, AND PHOTO. IF YOU DON'T HAVE ACCESS TO AEPS, YOU CAN ALSO OBTAIN THIS INFORMATION BY CONTACTING THE TACOM SENIOR COMMAND REPRESENTATIVE (SCR) FOR YOUR AREA. CONUS (INCLUDES NATIONAL GUARD, CONUS ARMY RESERVE UNITS, SOUTHCOM, AND KUWAIT), DSN 367-6204-6293, COMMERCIAL 404-464-6204/6293; USAREUR (GREAT BRITAIN, GERMANY, BELGIUM, LUXEMBURG, ITALY, BOSNIA, KOSOVO, AND MACEDONIA), DSN 375-6128/7436, COMMERCIAL 01149 621-487-3461/6218, FAR EAST (INCLUDES ALASKA, HAWAII, KOREA, OKINAWA, KWAJALIEN, AND JAPAN), DSN 315-722-3036/3881, COMMERCIAL 011 82 32 520-6036/6881.

SUBJECT: MAINTENANCE ADVISORY MESSAGE (MAM), TACOM CONTROL NO. MAM-01-006, M1000 70 TON SEMI TRAILER NSN 2330-01-303-8832 LIN S70859. REFERENCE: MAINTENANCE ADVISORY MESSAGE, TACOM CONTROL NO. MAM 01-001, DTG 311306ZOCT00.

1. DISTRIBUTION: THIS IS A "MAINTENANCE ADVISORY MESSAGE." REQUEST MACOM COMMANDERS RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE COMMANDS/ACTIVITIES.

2. ISSUE: THE TEMPORARILY SUSPENSION OF THE 5-YEAR SERVICE REQUIREMENT ON THE M1000 UPPER AND LOWER STEERING PLATE BEARINGS AND LOWER SUSPENSION BEARINGS THAT WAS ISSUED IN REFERENCED MAINTENANCE ADVISORY MESSAGE, TACOM CONTROL NO. MAM 01-001 HAS BEEN RESCINDED.

3. USER ACTIONS:

A. OWNING UNITS ARE NOW REQUIRED TO START THE FIVE-YEAR SERVICE FOR THOSE TRAILERS THAT REQUIRE THE SERVICE. THE NEW PROCEDURES FOR THE 5-YEAR SERVICE REQUIREMENT WILL BE MAILED TO YOUR LOCAL TACOM LOGISTIC ASSISTANCE REPRESENTATIVE (LAR) AND YOUR STATE SURFACE MAINTENANCE MANAGER. UNITS MAY ALSO RECEIVE A COPY BY CONTACTING MS. DENISE JACKSON-RODGERS AT TACOM. DSN 786-8848, COMM 1-810-574-8848 AND E-MAIL JACKSODE@ TACOM.ARMY.MIL.

B. UPON RECEIPT OF THE NEW PROCEDURES OWNING UNITS WILL BE REQUIRED TO RE-SCHEDULE ALL UNSERVICED TRAILERS AND PERFORM THE SERVICE. THE NEW PROCEDURES ARE LESS LABOR INTENSIVE WHICH WILL REDUCE DOWNTIME AND PROVIDE A COST SAVINGS TO OWNING UNITS AND THE ARMY.

C. UNIT COMMANDERS, CONTACT YOUR LOCAL TACOM LOGISTICS ASSISTANCE REPRESENTATIVE (LAR) OR YOUR STATE SURFACE MAINTENANCE MANAGER UPON RECEIPT OF THIS MESSAGE FOR ASSISTANCE. FOR ASSISTANCE IN LOCATING YOUR TACOM LAR, SEE PARAGRAPH 6C.

4. TACOM/PM ACTIONS: TACOM IS IN THE PROCESS OF DISTRIBUTING NEW PROCEDURES AND GUIDANCE ON THE 5 YEAR SERVICE REQUIREMENT FOR THE M1000 SEMITRAILER UPPER AND LOWER STEERING PLATE BEARINGS AND LOWER SUSPENSION BEARINGS. THIS INFORMATION WILL BE PUBLISHED TO THE FIELD, LARS AND STATE SERVICE MAINTENANCE OFFICERS DURING THE MONTH OF FEBRUARY 2001. USER HAVE PERMISSION TO MAKE COPIES OF THE NEW PROCEDURES AND PLACE THEM IN THEIR TM 9-2330-381-14. THE TM WILL BE UPDATED WITH THE NEW PROCEDURES AT A FUTURE DATE. THE NEW PROCEDURES WILL ALSO BE POSTED TO THE ARMY ELECTRONIC PRODUCT SUPPORT (AEPS.) WEB SITE. IF YOU DO NOT HAVE ACCESS TO AEPS, YOU CAN ALSO OBTAIN THIS INFORMATION BY CONTACTING THE TACOM SENIOR COMMAND REPRESENTATIVE (SCR) FOR YOUR AREA. CONUS-EAST (INCLUDES ALL UNITS EAST OF THE MISSISSIPPI PLUS FT.POLK. TO INCLUDE NATIONAL GUARD AND RESERVE) DSN 367-6293, COMMERCIAL 404-464-6293. CONUS-WEST (INCLUDES ALL UNITS WEST OF THE MISSISSIPPI, EXCEPT FT.POLK. TO INCLUDE ALL NATIONAL GUARD AND RESERVE UNITS) DSN 737-0263, COMMERCIAL 254-287-0263.

5. SUPPLY STATUS: NOT APPLICABLE

6. POC:
A. MIKE DECKER DECKERM@TACOM.ARMY.MIL DSN 786-7438
B. APM GREGORY C. EDGIN EDGING@TACOM.ARMY.MIL DSN 786-7549

SUBJECT: SAFETY OF USE MESSAGE (SOUM), TACOM CONTROL NO. SOUM-01-012TECHNICAL, FOR ALL SERIES HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLES (HMMWV) EQUIPPED WITH THE DISTRIBUTION BOX, NSN 6110-01-446-7126 (NONVERSION 14.0A), SUPPLIED WITH KIT NSN 6110-01-446-7125.

```
D    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX D
 A   X                "WARNING"              X  A
  N  X DEATH OR SERIOUS INJURY TO SOLDIERS, OR DAMAGE   X   N
   G X TO ARMY EQUIPMENT WILL OCCUR IF THE INSTRUCTIONS X    G
    E X IN THIS MESSAGE ARE NOT FOLLOWED.          X     E
     R XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX      R
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REFERENCE, SOUM 00-015, DATE/TIME GROUP 311651Z MAY 00
REFERENCE, SOUM 99-07, DATE/TIME GROUP 301214Z APR 99

1. DISTRIBUTION:

A. THIS IS A TECHNICAL SAFETY OF USE MESSAGE. MACOM COMMANDERS WILL RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE COMMANDS/ACTIVITIES WITHIN 24 HOURS OF RECEIPT OF THIS MESSAGE AND ACKNOWLEDGE RECEIPT OF THIS MESSAGE WITHIN FIVE WORKING DAYS TO: CDRTACOM, WARREN MI//AMSTA-LC-CIPWM// DSN 786-6096, COMMERCIAL (810) 574-6096 OR NADDRESS:SAFETYOFUSE@TACOM.ARMY.MIL.

B. MACOM COMMANDERS WILL ALSO TRACK AND REPORT COMPLIANCE OF THIS MESSAGE FOR ALL SUBORDINATE COMMANDS/ACTIVITIES TO: MS. JODY MCINERNEY, AMSTA-LC-CHLC, DSN 786-6277, COMMERCIAL 810-574-6277,EMAIL: MCINERNJ@TACOM.ARMY.MIL.

2. PROBLEM:

A. VEHICLES CONTINUE TO BE OPERATED WITH NON-VERSION 14.0ADISTRIBUTION BOX, NSN 6110-01-446-7126, WHICH WAS INSTALLED WITH KIT NSN 6110-01-446-7125. THESE BOXES ARE CONSIDERED DANGEROUS AND WERE TO BE TURNED IN PER SOUM 99-007. THESE BOXES CAN CAUSE THE TRUCK TO CRANK OVER ON ITS OWN EITHER DURING OPERATION OR AFTER THE VEHICLE HAS BEEN STOPPED AND THE RUN SWITCH TURNED OFF. SOME FIELD REPORTS HAVE INDICATED VEHICLES ARE ALSO EXPERIENCING PREMATURE BATTERY DRAIN OVERNIGHT AS WELL AS HEATER/WIPER MOTORS WORKING ERRATICALLY.

B. IF VEHICLE IS UNATTENDED AND THE STARTER CRANKS ON ITS OWN, IT CAN CONTINUE UNTIL THE BATTERIES ARE DRAINED OF POWER, OR THE STARTER/WIRING HARNESS SHORTS OUT. SHOULD THE STARTER OR WIRING HARNESS SHORT OUT WHILE SELF CRANKING,

C. THERE IS POTENTIAL FOR THE VEHICLE TO CATCH FIRE AND BE DESTROYED. IF THE STARTER SHOULD ENGAGE UNEXPECTEDLY, THERE IS ALSO A POTENTIAL FOR INJURY TO PERSONNEL.

3. USER ACTIONS:

A. (1) IMMEDIATELY INSPECT SUBJECT VEHICLES TO DETERMINE IF ANY ARE EQUIPPED WITH THE DISTRIBUTION BOX NSN 6110-01-446-7126, WHICH WAS INSTALLED WITH KIT NSN 6110-01-446-7125. THE DISTRIBUTION BOX IS LOCATED UNDER THE LEFT SIDE DASH BOARD ABOVE THE BRAKE PEDAL. DETERMINING IF THE VEHICLE IS EQUIPPED WITH THE DISTRIBUTION BOX CAN BE DONE BY RAISING THE HOOD AND LOOKING FOR TWO CANNON PLUG CONNECTORS INSTEAD OF ONE, NEXT TO THE WINDSHIELD WASHER RESERVOIR.
(2) IF EQUIPPED WITH DISTRIBUTION BOX, INSPECT LABEL TO DETERMINE WHICH VERSION IS INSTALLED. VERSION 14.0A'S ARE SO ANNOTATED WITH EVER: 14.0A" ON THE LABEL NEXT TO THE SERIAL NUMBER. IF THE LABEL IS MISSING OR DOES NOT INDICATE VER: 14.0A, REMOVE THE DISTRIBUTION BOX AND REPLACE WITH THE NEW ENGINE ELECTRICAL START SYSTEM (EESS), NSN6110-01-463-9260 WITHIN 60 DAYS OF RECEIPT OF THIS MESSAGE. AFTER 60 DAYS, VEHICLES NOT IN COMPLIANCE ARE DEADLINED.

B. IF UNITS EXPERIENCE ANY TYPE OF FAILURES WITH THE DISTRIBUTION BOX, REPORT ALL FAILURES TO HMMWV-REPORTING@TACOM.ARMY.MIL.

C. UNIT COMMANDERS, CONTACT YOUR LOCAL TACOM LOGISTICS ASSISTANCE REPRESENTATIVE (LAR) OR YOUR STATE SURFACE MAINTENANCE MANAGER UPON RECEIPT OF THIS MESSAGE FOR ASSISTANCE. FOR ASSISTANCE IN LOCATING YOUR TACOM LAR, SEE PARAGRAPH 6C.

4. TACOM/PM ACTIONS: THERE ARE NO FURTHER TACOM/PM ACTIONS FOR NON-VERSION 14.0A DISTRIBUTION BOXES.

5. SUPPLY STATUS: EESS, NSN 6110-01-463-9260, AKZ, STOCK ON HAND FOR HIGH PRIORITY REQUISITIONS.

6. POC:

A. FOR TECHNICAL ISSUES: MS. JODY MCINERNEY, AMSTA-LC-CHLC, DSN 786-6277, COMMERCIAL (810) 574-6277, EMAIL: MCINERNJ@TACOM.ARMY.MIL.

B. FOR SUPPLY ISSUES: MR. JIM COLE, AMSTA-LC-CHLC, DSN 786-6577, COMMERCIAL (810) 574-6577, EMAIL: COLEJ@TACOM.ARMY.MIL.

C. TO FIND YOUR TACOM LAR, LOG ONTO THE ARMY ELECTRONIC PRODUCT SUPPORT WEB SITE AT HTTPS://AEPS.RIA.ARMY.MIL. ONCE LOGGED INTO THE AEPS SITE, SELECT THE LAR LOCATOR SERVICE, THEN SELECT THE APPROPRIATE REGION, I.E.: CONUS, USAREUR, FAR-EAST, KUWAIT. SELECT THE LOCATION NEAREST YOU AND CLICK ON A NAME. THIS WILL GIVE YOU A LAR'S NAME, DSN AND COMMERCIAL PHONE NUMBER, EMAIL ADDRESS, AND PHOTO. IF YOU DON'T HAVE ACCESS TO AEPS, YOU CAN ALSO OBTAIN THIS INFORMATION BY CONTACTING THE TACOM SENIOR COMMAND REPRESENTATIVE (SCR) FOR YOUR AREA. CONUS-EAST (INCLUDES ALL UNITS EAST OF THE MISSISSIPPI PLUS FORT POLK TO INCLUDE NATIONAL GUARD AND RESERVE UNITS), DSN 367-6293, COMMERCIAL 404-464-6293. CONUS-WEST (INCLUDES ALL UNITS WEST OF THE MISSISSIPPI EXCEPT FORT POLK, TO INCLUDE ALL NATIONAL GUARD AND RESERVE UNITS), DSN 737-0263, COMMERCIAL 254-287-0263.FORSCOM

(INCLUDES SOUTHCOM, KUWAIT, CONUS UNITS DEPLOYED AND RESERVE UNITS NOT OTHERWISE COVERED) DSN 367-6293 COMMERCIAL 404-464-6293; USAREUR (GREAT BRITAIN, GERMANY, BELGIUM, LUXEMBURG, ITALY, BOSNIA, KOSOVO, AND MACEDONIA) DSN 375-6128/7436, COMMERCIAL 01149 621-487-3461/6218, FAR EAST (INCLUDES ALASKA, HAWAII, KOREA, OKINAWA, KWAJALIEN AND JAPAN) DSN 315-722-3036/3881, COMMERCIAL 011 82 32 520-6036/6881.

SUBJECT: GROUND PRECAUTIONARY MESSAGE (GPM), TACOM CONTROL NO. GPM-01-011, ITEM AFFECTED: CRANES WITH NSN 3810-01-165-0647 UNDER LIN C36219 AND NSN 3810-01-165-0646 UNDER LIN C36151.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X "ATTENTION" X
X THIS MESSAGE CONTAINS INFORMATION THAT IS VITAL X
X TO THE SAFETY OF ARMY PERSONNEL AND THE OPERATION X
X OR MAINTENANCE OF ARMY EQUIPMENT. X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

1. DISTRIBUTION: THIS IS A "GROUND PRECAUTIONARY MESSAGE". MACOM COMMANDERS WILL RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE COMMANDS/ACTIVITIES WITHIN 24 HOURS OF RECEIPT OF THIS MESSAGE AND ACKNOWLEDGE RECEIPT OF THIS MESSAGE WITHIN FIVE WORKING DAYS TO:CDRTACOM, WARREN MI //AMSTA-LC-CIPWM// DSN 786-6096; COMMERCIAL (810) 574-6096 OR DDN ADDRESS: SAFETYOFUSE@TACOM.ARMY.MIL.

2. PROBLEM: THE BIASED TIRES FOR THE LRT110 CRANE ARE NO LONGER AVAILABLE AND HAVE BEEN REPLACED WITH RADIAL TIRES. RADIAL TIRES REDUCE THE LIFTING CAPACITY FOR THE CRANE. THE RADIAL TIRE AFFECTS THE PICK AND CARRY OPERATION OF THE LRT110 CRANE, THUS CAUSING THE POSSIBILITY OF TIP OVER AND BODILY INJURIES. THE RADIAL TIRE PRESSURE MUST BE INCREASED TO 115 PSI.

3. USER ACTIONS:

A. ORGANIZATIONAL MAINTENANCE INSPECTS LRT110 CRANES FOR RADIAL TIRES BY LOOKING FOR THE SIZE IDENTIFICATION "12R22.5" ON THE SIDE WALL OF THE TIRE. THE "R" IN THE SIZE IDENTIFIES THE TIRE AS A RADIAL.

B. ORGANIZATIONAL MAINTENANCE MUST POST THE FOLLOWING WARNING ON THE LRT110 CRANE.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X X
X "WARNING" X
X "DO NOT USE THIS CRANE TO PERFORM PICK AND CARRY OPERATIONS OR X
X ON TIRE LIFTS." X
X X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

THE WARNING CONSISTS OF TWO IDENTICAL ADHESIVE STICKERS PER CRANE. ONE MUST BE PLACED ON THE LOAD CHART IN THE OPERATOR'S CAB AND THE OTHER ON THE LOAD CHART RIVETED TO THE LEFT SIDE OF THE CRANE. EACH STICKER MUST BE PLACED OVER THE "ON TIRE" PORTION OF THE LOAD CHARTS. STICKERS WILL BE FORWARDED TO USING UNITS BY TACOM.

C. ORGANIZATIONAL MAINTENANCE MUST INSURE THAT THE CRANE HAS EITHER ALL BIASED TIRES INSTALLED, OR ALL RADIAL TIRES INSTALLED ON THE VEHICLE. DO NOT MIX BIASED AND RADIAL TIRES ON THE SAME CRANE.

D. ORGANIZATIONAL MAINTENANCE MUST STENCIL RADIAL TIRE PRESSURE, "115 PSI", ABOVE EACH TIRE ON THE EDGE OF THE FENDER.

E. NEW LOAD CHARTS WILL BE SHIPPED BY TACOM, AS SOON AS THEY ARE AVAILABLE, AND INSTALLED BY ORGANIZATIONAL MAINTENANCE. UNTIL NEW LOAD CHARTS ARE INSTALLED, AND TECHNICAL MANUAL UPDATES POSTED IN THE UNITS MANUALS, LRT110 MUST ONLY BE USED IN OUTRIGGER OPERATIONS.

F. OPERATOR'S SUPERVISOR MUST INSURE THE WARNINGS ARE POSTED ON THE LOAD CHARTS. A COPY OF THIS MESSAGE MUST BE PLACED IN THE CRANE'S RECORD JACKET UNTIL NEW LOAD CHARTS ARE INSTALLED. SUPERVISORS MUST SET UP AND IMPLEMENT TRAINING TO INFORM ALL PERSONNEL OPERATING THE LRT110 CRANE, THAT THE CRANE HAS A TEMPORARY RESTRICTION ON "TIRE LIFT". THIS IS IN EFFECT UNTIL NEW LOAD CHARTS ARE INSTALLED. ONCE THE NEW LOAD CHARTS ARE RECEIVED, INSTRUCT YOUR OPERATORS ON THE DIFFERENCES IN THE LOAD CHARTS, AT VARIOUS BOOM ANGLES. RADIAL TIRES INSTALLED ON THE CRANE REDUCE THE WEIGHT LIFTING CAPACITY.

G. REPORT TO ONE OF TACOM'S POINT OF CONTACTS (POC) LISTED IN PARAGRAPH 7A. OR 7B., THE CRANE SERIAL NUMBER, LOCATION, MAINTENANCE POC, UNIT AND IDENTIFY THE TYPE OF TIRES CURRENTLY INSTALLED ON THE LRT110 CRANE NO LATER THAN 30 DAYS FROM THE DATE OF THIS MESSAGE.

H. THERE ARE NO HAZARDOUS MATERIALS INVOLVED IN COMPLYING WITH THIS GPM.

I. TECHNICAL REFERENCES FOR THIS GPM ARE TM 5-3810-305-10, TM 5-3810-305-24 AND TM 5-3810-305-24P

4. UNIT COMMANDERS, CONTACT YOUR LOCAL TACOM LOGISTICS ASSISTANCE REPRESENTATIVE (LAR) OR YOUR STATE SURFACE MAINTENANCE MANAGER UPON RECEIPT OF THIS MESSAGE FOR ASSISTANCE. FOR ASSISTANCE IN LOCATING YOUR TACOM LAR, SEE PARAGRAPH 7C.

5. TACOM/PM ACTIONS: TM 5-3810-305-10 CHANGES HAVE BEEN SUBMITTED TO THE UNITED STATES ARMY PRINTING AGENCY (USAPA) AND CHANGE 1, DATED 1 NOVEMBER 2000, IS AVAILABLE TO THE USER. TACOM WILL DISTRIBUTE ADHESIVE WARNING STICKERS AND NEW LOAD CHARTS. PROJECTED DELIVERY DATE FOR ADHESIVE-WARNING STICKERS IS 20 APRIL 2001. PROJECTED DELIVERY DATE FOR LOAD CHARTS IS 30 JULY 2001. AN EIR DIGEST ARTICLE WILL BE SUBMITTED AND IT WILL BE PUBLISHED IN THE JULY ISSUE 2001. A PS MAGAZINE ARTICLE WILL BE SUBMITTED AND IT WILL BE PUBLISHED IN SEPTEMBER ISSUE 2001.

6. SUPPLY STATUS: LOAD CHARTS AND ADHESIVE WARNING STICKERS WILL BE FURNISHED AT NO COST TO THE UNIT BY TACOM.

7. POC:

A. CRANE MAINTENANCE MANAGER IS MR. JAMES E. JUMP, DSN 786-6916 OR COMMERCIAL (810) 574-6916, E-MAIL JUMPJ@TACOM.ARMY.MIL, FAX (810) 574-7235.

B. WEAPONS SYSTEM MANAGER (WSM) IS MR. JAMES LOCICERO, DSN 786-7404 OR COMMERCIAL (810) 574-7404, E-MAIL LOCICERJ@TACOM.ARMY.MIL, FAX (810) 574-7235.

C. TO FIND YOUR TACOM LAR, LOG ONTO THE ARMY ELECTRONIC PRODUCT SUPPORT WEB SITE AT HTTPS://AEPS.RIA.ARMY.MIL. ONCE LOGGED INTO THE AEPS SITE, SELECT THE LAR LOCATOR SERVICE, THEN SELECT THE APPROPRIATE REGION, I.E.: CONUS, USAREUR, FAR EAST, KUWAIT. SELECT THE LOCATION NEAREST YOU AND CLICK ON A NAME. THIS WILL GIVE YOU A LAR'S NAME, DSN AND COMMERCIAL PHONE NUMBER, EMAIL ADDRESS, AND PHOTO. IF YOU DON'T HAVE ACCESS TO AEPS, YOU CAN ALSO OBTAIN THIS INFORMATION BY CONTACTING THE SENIOR COMMAND REPRESENTATIVE (SCR) FOR YOUR AREA. CONUS - EAST (INCLUDES ALL UNITS EAST OF THE MISSISSIPPI PLUS FORT POLK TO INCLUDE NATIONAL GUARDS AND RESERVE UNITS) DSN 367-6293, COMMERCIAL 404-464-6293. CONUS - WEST (INCLUDE ALL UNITS WEST OF THE MISSISSIPPI EXCEPT FORT POLK, TO INCLUDE ALL NATIONAL GUARD, RESERVE UNITS, SOUTHCOM AND KUWAIT) DSN 737-0263, COMMERCIAL 254-287-0263; USAREUR (GREAT BRITAIN, GERMANY, BELGIUM, LUXEMBURG, ITALY, BOSNIA, KOSOVO, AND MACEDONIA) DSN 375-6128/7436, COMMERCIAL 01149 621-487-3461/6218; FAR EAST (INCLUDES ALASKA, HAWAII, KOREA, OKINAWA, KWAJALEIN, AND JAPAN) DSN 315-722-6036/6579, COMMERCIAL 011 82 32 520-6036/6579.

Vehicle Computer Trouble Codes

Computer trouble codes are pulsing signals produced by the computer when an operating parameter is exceeded. An operating parameter is an acceptable minimum and maximum electrical value. It might be an acceptable voltage range from the oxygen sensor, a resistance range for a temperature sensor, or an acceptable current draw from an injector coil. In any case, the computer knows the limits for most input and output levels. If an electrical value is too weak or too strong for known parameters, the computer is preprogrammed to store a trouble code and turn on a dash warning light.

Depending upon the make and model of the vehicle, there are several ways to activate or energize computer self-diagnosis to pull out trouble codes. The most common methods are:

1. Connect jumper wire or paper clip across two of the terminals in the computer self test connector.
2. Connect jumper wire to ground one of the diagnostic connector terminals.
3. Connect analog voltmeter to the battery positive terminal and to one terminal on the diagnostic connector while jumping from pigtail to diagnostic connector terminal.
4. Pushing two dash climate control buttons at the same time.
5. Turn small mode selector on the side of the computer with a screwdriver.
6. Activate wide-open throttle switch on the engine and have idle actuator closed while having someone turn on ignition.
7. Turn ignition key on and off three times within five seconds and then leave key on.
8. Plugging many scanning testers into diagnostic connector will automatically trigger self-diagnosis.

These are very general ways that the self-test mode can be energized. Always refer to the service manual for detailed instructions. Procedures vary for each model as well as from year to year.

Ford Trouble Codes

		2 Digit Codes
11		System OK
12		Idle Speed Control motor or Air Bypass not controlling idle properly (generally idle too low) - ISC
13	(O)	ISC did not respond properly (extends to touch throttle then retracts for KOEO) - ISC
	(R)	Idle Speed Control motor or Air Bypass not controlling idle properly (generally idle too high)
	(M)	ISC sticking, open ITS circuit or TP sticking
14		Ignition pickup (PIP) was erratic - Ignition Systems
		E4OD Transmission diesel RPM sensor - Diesel RPM sensor
15	(O)	No Keep Alive Memory power to PCM pin 1 or bad PCM (Memory Test Failure)
	(M)	KAM (pin 1) was interrupted (was battery disconnected)
16		1 9L & 2 5L - Throttle stop set too high - IDLE or Idle Set Procedures
		2 3L - RPM's too low - IDLE
	(O)	Electronic ignition - IDM circuit fault - Ignition Systems

17		1 9L & 2 5L - Throttle stop set too low - IDLE
18	(R)	Check base timing & advance function - Timing Tests
	(M)	Ignition TACH signal erratic - Ignition Systems
		Spark Angle Word (SAW) circuit failure (1 9L SFI)
19	(O)	No Vehicle Power (pins 37 + 57) or bad PCM VPWR Diagnosis
	(R)	Erratic idle during test (reset throttle & retest) - Idle Set Procedures
		Electronic ignition Cylinder ID sensor/circuit problem - Ignition Systems
21		Engine Coolant Temperature (ECT) sensor out of range - ECT
22		MAP (vacuum) or BARO signal out of range - MAP
23		Throttle sensor out of range or throttle set too high - TPS
24		Intake Air Temperature (IAT) or Vane Air Temperature (VAT) sensor out of range - IAT VAT
25		Knock sensor not tested (ignore if not pinging) - KS
26		Mass Air Flow (MAF) or Vane Air Flow (VAF) out of range - MAF VAF
		Transmission Oil Temperature (TOT) sensor out of range, Transmissions
27		Vehicle Speed Sensor problem - VSS
28		Vane Air Temperature (VAT) sensor out of range - VAT
		2 3L w/Electronic Ignition - Cyl ID, IDM low or right coil pack failure - Ignition Systems
29		Vehicle Speed Sensor problem - VSS
31	(O,R,M)	EVP - EVP signal is/was out of range - EVP
	(O,R,M)	EVR - EVP signal is/was low - EVR
	(O,R,M)	PFE - PFE signal is/was low - PFE
32	(R)	EVP - EGR not responding properly during test - EVP
	(O,R,M)	EVR - EVP signal is/was low - EVR
	(R,M)	PFE - PFE shows low pressure, EGR not seating or memory, not seating intermittently - PFE
33	(O,M)	ALL - EGR did not open/ respond during test or if memory code, did not open intermittently - EVP EVR PFE
34	(R)	EVP - EGR did not respond properly during test - EVP
	(O,R,M)	EVR - EVP sensor is/was high - EVR
	(O,R,M)	PFE - PFE sensor is/was out of range - PFE
35	(R)	EVP - Engine RPM's too low to test EGR system - EVP
	(O,R,M)	EVR - EVP sensor signal is/was high - EVR
	(O,R,M)	PFE - PFE sensor signal is/was high - PFE
38		Idle Tracking Switch signal was intermittent - ISC

39		Transmission Torque Converter clutch not engaging - Transmissions
41	(R)	System lean - Fuel control
	(M)	System was lean for 15 seconds or more (no HO2S switching) - Fuel control
42	(R)	System rich - Fuel control
	(M)	System was rich for 15 seconds or more (no HO2S switching) - Fuel control
43	(R)	HO2S sensor not reading (run at 2000 rpm's for 2 minutes and retest - check for HO2S switching)
	(M)	Was lean at WOT for 3 seconds or more - Fuel control
44		AIR system inoperative - Air Injection
45		AIR not Diverting (AIRD) - Air Injection
		Electronic Ignition - coil primary circuit failure - Ignition Systems
46		AIR Bypass (AIRB) not working - Air Injection
		Electronic Ignition - primary circuit failure coil 2 - Ignition Systems
47		Low flow unmetered air (check for small vacuum leaks, injector o'rings, gaskets etc)
		E4OD transmission 4x4 switch/circuit problem - Transmissions
48		High flow unmetered air (check for large vacuum leak, inlet hoses etc)
		Electronic Ignition - coil primary circuit failure - Ignition Systems
49		Electronic Ignition - spout signal circuit problem - Ignition Systems
		Transmission 1/2 shift problem - Transmissions
51		Engine Coolant Temperature (ECT) sensor signal is/was too high - ECT
52		Power Steering Pressure Switch/circuit open - PSP
	(R)	Did you turn wheel during test
53		Throttle Position sensor too high - TPS
54		Intake Air Temperature (IAT) or Vane Air Temperature (VAT) signal high - IAT VAT
55		No or low (under 7 5 V) Key Power to PCM pin 5
56		Vane Air Flow (VAF) or Mass Air Flow (MAF) sensor high - VAF MAF
		Transmission Oil Temperature sensor too high - Transmissions
57		Intermittent in Park/Neutral/ Switch or Neutral Pressure switch circuit - PNP or Transmissions
58		Idle Tracking Switch (ITS) signal problem ISC
		Vane Air Temperature (VAT) sensor out of range or open - VAT
59		AXOD 4/3 circuit fault - Transmissions
		3 0L SHO - Low speed fuel pump circuit problem - Power / Fuel Pump Circuits

		Transmission 2/3 shift problem - Transmissions
61		Engine Coolant Temperature (ECT) sensor is or was too low - ECT
62		AXOD (KOEO only) 3/2 circuit short to ground - Transmissions
		AXOD (KOEO AND KOER) 4/3 circuit failure - Transmissions
		E4OD excessive converter clutch slippage - Transmissions
63		Throttle Position Sensor (TPS) signal too low TPS
64		Intake Air Temperature (IAT) or Vane Air Temperature (VAT) signal low or grounded - IAT VAT
65		Check intermittent HO2S (signal or ground) - Fuel Control
	(R)	E4OD truck - cycle OD cancel switch after engine ID is received - Transmissions
		1984 3 8L ONLY - O, M Battery voltage high (check for electrical system overcharging)
66		Vane Air Flow (VAF) or Mass Air Flow (MAF) signal low - VAF MAF
		Transmission Oil Temperature (TOT) signal low (possibly grounded) - Transmissions
67		Park/Neutral circuit fault - PNP
		Transmission Manual Lever Position (MLP) sensor circuit - Transmissions
	(M)	Intermittent Park Neutral Position (PNP) sensor fault - PNP
68		Idle Tracking Switch (ITS) circuit (possibly grounded) - ISC
		Vane Air Temperature (VAT) sensor out of range or grounded - VAT
		3 8L AXOD -Transmission Temperature Switch (TTS) open - Transmissions
		Electronic Transmission - Transmission Oil Temperature (TOT) sensor was overheated -Transmissions
69		AXOD transmission (O) 3/2 switch closed (possible short circuit) - Transmissions
		AXOD (M) 3/2 switch open (poss. short to power) - Transmissions
		E4OD 3/4 shift problem - Transmissions
70	(M)	3 8L AXOD - Data link to instrument cluster fault Service any other EEC codes, erase memory and retest If code is still present refer to instrument cluster diagnosis manual
71	(M)	1 9L TBI, 2 3L TBI, 2 5L TBI - ITS signal was grounded when throttle should have been opening ITS-ISC ISC motor problem or Idle Tracking Switch (ITS) signal wire shorted to ground - ISC
	(M)	1 9L MFI - PCM re-initialized possible electrical noise, case ground or intermittent VPWR problem - VPWR Diagnosis
	(M)	3 8L AXOD - Data link to instrument cluster fault - See code 70

72	(R)	No MAP or MAF change in "goose" test - retest, check for frequency or voltage change - MAP MAF
	(M)	1 9L MFI - VPWR circuit to PCM was intermittent - VPWR Diagnosis
	(M)	2 3L T/C - PCM re-initialized possible electrical noise, case ground or intermittent VPWR problem - VPWR Diagnosis
	(M)	3 8L AXOD - Message center data link circuit fault - See code 70
73	(O)	Rerun test, if 73 is still output replace TPS
	(R)	No Throttle Position Sensor (TPS) change in "goose" test must get at least 25% throttle rotation - TPS
74		Was brake depressed after engine ID was received
		Brake On Off (BOO) signal open or short to ground - BOO
75		Brake On Off (BOO) signal shorted to power - BOO
76		Vane Air Flow (VAF) did not respond to "goose" test - VAF
77		System did not receive "goose" test - see TESTS
78	(M)	VPWR circuit to PCM was intermittent or the PCM is bad VPWR Diagnosis
79		A/C is on or pin 10 is shorted to power
81		Boost control solenoid - Solenoids
		AIRD solenoid - Solenoids and Air Injection
		3 0L SHO - Inlet Air Solenoid - Solenoids
82		2 3L TC - Fan Control wire shorted to ground - A/C and Fan Circuits
		AIRB solenoid - Solenoids and Air Injection
		3 8L SC - Super Charger Bypass Solenoid - Solenoids
83		High Electro Drive Fan circuit fault - A/C and Fan Circuits
		EGR Control solenoid - Solenoids
		3 0L SHO - Low Speed Fuel Pump Relay circuit - Power / Fuel Pump Circuits
84		EGR Vacuum Regulator - Solenoids
		EGR cutoff solenoid - Solenoids
		EGR Vent solenoid - Solenoids
85		2 3L T/C Automatic - 3/4-4/3 Shift solenoid - Transmissions
		CANP solenoid (ALL 1989) - Solenoids
	(M)	1 9L MFI - System has corrected rich condition - Fuel control
86		2 3L or 2 9L Truck - A4LD 3/4 shift solenoid - Transmissions
		(M) 1 9L MFI - System has corrected lean condition - Fuel control

87	(O)	Fuel pump circuit fault (check inertia switch) - Power / Fuel Pump Circuits
		Vehicles with 2BBL carb - Temperature Compensated Accelerator Pump Solenoid - Solenoids (M) intermittent in fuel pump primary circuit Power / Fuel Pump Circuits NOTE: On some Escorts with automatic seat belts this code is normal IN MEMORY due to the wiring
88		Throttle Kicker Solenoid - Solenoids
		Variable Voltage Choke relay circuit fault - VVC
		Fan Control circuit fault - A/C and Fan Circuits
		A4LD - Converter Clutch Override solenoid - Transmissions
		Electronic Ignition - IDM, DPI or spout circuit fault - Ignition Systems
89		A4LD - Converter Clutch Override solenoid - Transmissions
		AXOD Torque Converter Control solenoid circuit - Transmissions
		Exhaust Heat Control (heat riser) solenoid circuit - Solenoids
91	(R, M)	System running lean - Fuel control
		Transmission SS 1 circuit/solenoid problem - Transmissions
92	(R)	System running rich - Fuel control
		Transmission SS 2 circuit/solenoid problem - Transmissions
93	(O,R)	Throttle linkage binding or bad ISC motor ISC HO2S not reading Fuel control
		Transmission TCC circuit/solenoid problem - Transmissions
94		AIR system inoperative - Air Injection
		Transmission TCC circuit/solenoid problem - Transmissions
95	(O)	Fuel pump: open, bad ground or always on - Power / Fuel Pump Circuits
	(R)	AIR not Diverting (AIRD) - Air Injection
	(M)	Possible bad fuel pump ground or open between fuel pump and pin 8 at PCM (Fuel Pump Monitor signal) - Power / Fuel Pump Circuits
96	(O)	Fuel pump monitor circuit shows no power - Power / Fuel Pump Circuits
	(R)	AIR Bypass (AIRB) not working - Air Injection
	(M)	(Service 87 code first if present) Fuel pump relay or battery power feed was open - Power / Fuel Pump Circuits
97		E4OD OD cancel light circuit failure - Transmissions
98	(R)	Did not pass KOEO yet (Get 11 in KOEO first)
		Transmission EPC circuit/solenoid failure - Transmissions
99	(R)	ISC needs to learn (Let idle for 2 minutes, Erase memory and retest)
		Transmission EPC circuit/solenoid failure - Transmissions

		3 Digit codes
111		System checks OK
112	(O,M)	Intake Air Temperature (IAT) sensor is/was low or grounded - IAT
113	(O,M)	IAT sensor is/was high or open - IAT
114	(O,R)	IAT sensor out of range - IAT
116	(O,R)	Engine Coolant (ECT) sensor out of range - ECT
117	(O,M)	ECT sensor is/was low or grounded - ECT
118	(O,M)	ECT sensor is/was high or open - ECT
121	(O,R,M)	Throttle Position (TP) sensor out of range - TPS
122	(O,M)	TP low (possibly grounded or open circuit) - TPS
123	(O,M)	TP is/was high or short to power - TPS
124	(M)	TP voltage was higher than expected - Fuel control
125	(M)	TP voltage was lower than expected - Fuel control
126	(O,R,M)	MAP or BARO sensor out of range - ">MAP
128	(M)	MAP vacuum has not been changing - check vacuum lines - ">MAP
129	(R)	No MAP or Mass Air Flow sensor change during "goose" test - MAP MAF
136	(R)	Oxygen sensor not switching/system lean Left or Front HO2S - Fuel control
137	(R)	Oxygen sensor not switching/system rich Left or Front HO2S - Fuel control
138	(R)	Fault in Cold Start Injector circuit - Fuel control
139	(M)	Oxygen sensor not switching Left or Front HO2S - Fuel control
144	(M)	Oxygen sensor not switching Single, Right or Rear HO2S - Fuel control
157	(R,M)	Mass Air Flow signal is/was low or grounded - MAF
158	(O,R,M)	MAF sensor is/was high or short to power - MAF
159	(O,R)	MAF sensor is/was out of range - MAF
167	(R)	No Throttle Position sensor change in "goose" test (must get at least 25% rotation) - TPS
171	(M)	Oxygen sensor not switching - system was at adaptive limits - Single, Right or Rear HO2S - Fuel control
172	(R,M)	Oxygen sensor not switching - system is or was lean - Single, Right or Rear HO2S - Fuel control
173	(R,M)	Oxygen sensor not switching - system is or was rich - Single, Right or Rear HO2S - Fuel control

174	(M)	Oxygen sensor was slow in switching Single, Right or Rear HO2S - Fuel control
175	(M)	Oxygen sensor not switching - system was at adaptive limits - Left or Front HO2S - Fuel control
176	(M)	Oxygen sensor not switching - system is or was lean Left or Front HO2S - Fuel control
177	(M)	Oxygen sensor not switching - system was rich Left or Front HO2S - Fuel control
178	(M)	Oxygen sensor was slow in switching Left or Front HO2S - Fuel control
179	(M)	Fuel system was rich at part throttle Single, Right or Rear HO2S - Fuel control
181	(M)	Fuel system was lean at part throttle Single, Right or Rear HO2S - Fuel control
182	(M)	Fuel system was rich at idle Single, Right or Rear HO2S - Fuel control
183	(M)	Fuel system was lean at idle Single, Right or Rear HO2S - Fuel control
184	(M)	Mass Air (MAF) output higher than expected - Fuel control
185	(M)	Mass Air (MAF) output lower than expected - Fuel control
186	(M)	Injector pulse width longer than expected or Mass Air Flow (MAF) lower than expected - Fuel control
187		Injector pulse width shorter than expected or Mass Air Flow (MAF) higher than expected - Fuel control
188	(M)	Fuel system was rich at part throttle - Left or Front HO2S - Fuel control
189	(M)	Fuel system was lean at part throttle - Left or Front HO2S - Fuel control
191	(M)	Fuel system was rich at idle - Left or Front HO2S - Fuel control
192	(M)	Fuel system was lean at idle - Left or Front HO2S - Fuel control
193		Failure in Flexible Fuel (FF) sensor circuit - Fuel control
194	(M)	Perform cylinder balance test to check for inoperative injectors
195	(M)	Perform cylinder balance test to check for inoperative injectors
211	(M)	Ignition PIP signal was erratic or missing - Ignition Systems
212	(M)	Ignition TACH signal was erratic (module/wiring) or SPOUT circuit fault - Ignition Systems
213	(R)	Ignition SPOUT or SAW circuit open or shorted - Ignition Systems
214	(M)	Error in Cylinder ID (CID) circuit or signal - Ignition Systems
215	(M)	Primary circuit failure - ignition coil 1 - Ignition Systems
216	(M)	Primary circuit failure - ignition coil 2 - Ignition Systems
217	(M)	Primary circuit failure - ignition coil 3 - Ignition Systems
218	(M)	IDM signal open or high or left coil pack failure - Ignition Systems

219	(M)	SPOUT circuit failure, timing defaulted to 10 degrees - follow code 213 diagnosis
222	(M)	IDM open or high or right coil pack failure - Ignition Systems
223	(M)	Dual Plug (DPI), SPOUT or IDM circuit fault - Ignition Systems
224	(M)	Failure in ignition coil primary circuit - Ignition Systems
225	(R)	Knock sensor not tested (ignore if not pinging) - KS
226	(O)	Ignition Diagnostic Monitor (IDM) signal fault - Ignition Systems
232	(M)	EI primary coil circuit failure - Ignition Systems
238	(M)	EI primary circuit failure - ignition coil 4 - Ignition Systems
311	(R)	AIR system not working - Single, Right or Rear HO2S - Air Injection
312	(R)	AIR not diverting - Air Injection
313	(R)	AIR not bypassing - Air Injection
314	(R)	AIR inoperative, Left or Front HO2S - Air Injection
326	(R,M)	Pressure Feedback EGR shows low pressure EGR not seating or not seating intermittently - PFE
327	(O,R,M)	EGR feedback signal is / was low - EVR or PFE
328	(O,R,M)	EGR Valve Position (EVP) is / was low - EVR
332	(R,M)	EGR did not open/respond during test or if memory code, did not open intermittently - EVR or PFE
334	(O,R,M)	EVP sensor is/was high - EVR
335	(O)	EGR feedback signal is / was out of range - EVR or PFE
336	(O,R,M)	PFE sensor signal is / was high - >PFE
337	(O,R,M)	EGR feedback signal is/was was high - EVR
338	(M)	Cooling system did not heat up (check cooling system / thermostat operation)
339	(M)	Cooling system overheated (check cooling system / thermostat operation)
341	(O)	Octane jumper installed (information only code to notify you if it is installed)
411	(R)	Idle speed system not controlling idle properly (generally idle too high) - ISC
412	(R)	Idle speed system not controlling idle properly (generally idle too low) - ISC
452	(M)	Vehicle Speed Sensor (VSS) problem
511	(O)	No power to PCM pin 1 or bad PCM (processor)
512	(M)	Memory power (PCM pin 1) was interrupted - Was battery disconnected?
513	(O)	Replace processor (PCM) (internal failure)

519	(O)	PSP switch/circuit open - PSP h Pedal Position (CPP) circuit fault - PNP
528	(M)	System shows voltage at pin 10 (is A/C on) or pin 30 (PNP, CPP switch) - PNP
529	(M)	Data Communications Link to processor failure Service any EEC codes, erase memory and retest if code is still present refer to instrument cluster diagnosis manual
533	(M)	Data Communications Link to instrument cluster failure - see 529
536	(O,R,M)	Brake On Off open or shorted to ground - BOO
538	(R)	System did not receive "goose" test - TESTS
539	(O)	System shows voltage at PCM pin 10 Is A/C on
542	(O,M)	Fuel pump open, bad ground or always on - - Power / Fuel Pump Circuits
543	(O)	Fuel pump monitor circuit shows no power - Power / Fuel Pump Circuits
	(M)	(Service 556 code first if present) Fuel pump relay or battery power feed was open - Power / Fuel Pump Circuits
551		Problem in Intake Manifold Runner Control (IMRC) solenoid/circuit - Solenoids
552	(O)	AIRB solenoid/circuit failure - Solenoids
553	(O)	AIRD solenoid/circuit failure - Solenoids
554	(O)	Fuel Press Regulator Control solenoid/circuit fault - Power / Fuel Pump Circuits
556	(O,M)	Fuel pump relay primary circuit fault - Power / Fuel Pump Circuits
557	(O,M)	Low speed pump relay primary circuit fault - Power / Fuel Pump Circuits
558	(O)	EGR vacuum regulator solenoid/circuit failure - EVR or PFE or Solenoids
559	(O)	A/C relay primary circuit fault - A/C and Fan Circuits
563	(O)	High Fan Control (HFC) circuit failure - A/C and Fan Circuits
564	(O)	Fan Control (FC) circuit failure - A/C and Fan Circuits
565	(O)	Canister Purge 1 solenoid/circuit failure - Solenoids
566	(O)	Transmission 3/4 shift solenoid/circuit - Transmissions
569	(O)	Canister Purge 2 solenoid/circuit failure - Solenoids
578	(M)	A/C pressure sensor VREF short to ground - A/C and Fan Circuits
579	(M)	ACP sensor did not change with A/C on - A/C and Fan Circuits
581	(M)	Cooling fan current was excessive - A/C and Fan Circuits
582	(O)	Open cooling fan circuit - A/C and Fan Circuits
583	(M)	Fuel pump current was excessive - Power / Fuel Pump Circuits

584	(M)	Open power ground circuit - Power / Fuel Pump Circuits
585	(M)	A/C clutch current was excessive - A/C and Fan Circuits
586	(M)	Open circuit in A/C clutch - A/C and Fan Circuits
587	(O,M)	Communication problem between PCM and Variable Control Relay Module (VCRM) - Power / Fuel Pump Circuits
617	(M)	Transmission shift failure (1/2 shift) - Transmissions
618	(M)	Transmission shift failure (2/3 shift) - Transmissions
619	(M)	Transmission shift failure (3/4 shift) - Transmissions
621	(O)	Solenoid/circuit failure - shift solenoid 1 - Transmissions
622	(O)	Solenoid/circuit failure - shift solenoid 2 - Transmissions
624	(O,M)	Solenoid/circuit failure -Electronic Pressure Control (EPC) current is high - Transmissions
625	(O,M)	Solenoid/circuit failure - Electronic Pressure Control (EPC) current is low - Transmissions
626	(O)	Transmission Coast Clutch (CCS) Solenoid/circuit fault - Transmissions
627	(O)	Torque Converter Clutch circuit fault - Transmissions
628	(M)	Excessive converter clutch slippage - Transmissions
629	(O,M)	Torque Converter Clutch circuit fault - Transmissions
631	(O)	Overdrive Cancel Light circuit problem - Transmissions
632	(R)	E4OD - Transmission Control Switch (TCS) should be cycled once between engine ID and Goose test
633	(O)	4x4L switch should be in 4x2 or 4x4 high for the test
634	(O,M)	Park/Neutral Position (PNP) or Clutch Pedal Position (CPP) circuit fault electronic shift transmission - Manual Lever Position (MLP) sensor out of range in Park-Transmissions
636	(O,R)	Transmission Oil Temperature (TOT) sensor out of range - Transmissions
637	(O,M)	TOT sensor is / was high or open - Transmissions
638	(O,M)	TOT sensor is / was low or grounded - Transmissions
639	(R,M)	Transmission Speed sensor (TSS) circuit fault - Transmissions
641	(O)	Transmission solenoid/circuit failure Shift Solenoid 3 - Transmissions
643	(O,M)	Torque Converter Clutch (TCC) circuit - Transmissions
645	(M)	Transmission 1st gear failure - Transmissions
646	(M)	Transmission 2nd gear failure - Transmissions
647	(M)	Transmission 3rd gear failure - Transmissions
648	(M)	Transmission 4th gear failure - Transmissions
649	(M)	Transmission EPC system failure - Transmissions
651	(M)	Transmission EPC solenoid/circuit fault - Transmissions

652	(O)	Torque Converter Clutch (TCC) circuit fault - Transmissions
654	(O)	Transmission selector not in PARK - Transmissions
656	(M)	Torque Converter Clutch (TCC) slip - Transmissions
657	(M)	Transmission temperature was excessive - Transmissions

GM Diagnostic Codes

12	Diagnostic mode	44	O2 sensor (lean exhaust)
13	O2 sensor or circuit	45	O2 sensor (exhaust rich)
14	Coolant sensor/high temp	46	Vehicle anti-theft system
15	Coolant temp/low temp	47	Air condition clutch and cruise circuit
16	System voltage high (3.8L) DIS circuit	51	PROM, MEM CAL or ECM problem (3.1L)
17	• Crank signal circuit • ECM fault crank position sensor circuit (3.8L)	52	CALPK or ECM problem (3.1L)
18	• Crank signal circuit • ECM fault injector circuit (vin P-5.7L)	53	• System over voltage • EGR system (carb models) • Alternator out of range
19	Fuel pump circuit (shorted) Crank position sensor (88-91)	54	• Fuel pump circuit • EGR fault (3.8L)
20	Fuel pump circuit (open)	55	O2 sensor or ECM
21	TPS circuit	56	Vacuum sensor Quad drvier B (3.8L)
22	TPS out of adjustment	58	Trans code-TTS temp high
21/22	Grounded WOT circuit	59	Trans code-TTS temp low
23	• MAT circuit • IAC sensor (95 models)	61	O2 sensor signal faulty
24	Vehicle speed sensor	63	MAP sensor voltage high
25	MAT circuit	64	• MAP sensor voltage low • RH side O2 sensor lean

26	• Quad driver circuit • Throttle switch shorted	65	RH side O2 sensor rich
27	Throttle switch open	66	• 3-2 Control solenoid circuit fault 4L60E • A/C pressure sensor circuit out of range
28	Transmission range pressure switch	67	TCC solenoid circuit 4L60E
31	• Park/neutral switch • Cam sensor circuit • EGR circuit (88-90) • MAP sensor (shorted)	68	O/D ratio error 4L80E
32	• BARO sensor circuit (carb models) • EGR circuit (injected models) • MAP sensor (open)	69	• TCC stuck on 4L60E & 4L80E • A/C head pressure switch circuit
33	• MAP sensor (low vacuum) • MAF sensor • MAP sensor (voltage high)	72	VSS circuit loss transmission output signal
34	• MAP sensor (voltage low) • MAF sensor	73	Trans pressure control solenoid
35	• IAC valve or circuit • Idle speed control circuit(shorted)	74	Trans input speed error 4L80E
36	• MAF sensor • DIS system (quad 4) • Transaxle shift control (3.8L)	75	System voltage low
37	• MAT sensor temp high (3.8L) • Brake switch 4L60E trans	79	Transmission fluid temp high
38	• Brake input circuit • MAT sensor temp low(84-86)	81	Transmission 2-3 error
39	TCC knock sensor shorted(4.3L)	82	Transmission 1-2 error

40	Power steering pressure switch	83	TCC solenoid circuit fault
41	Faulty ignition module cam sensor (3.8L)	85	Undefined gear ratio
42	EST circuit	86	Low gear ratio error
43	• ESC circuit • Knock sensor signal	87	High gear ratio error

Disconnect Both Negative Cables

Before you start work on the electrical system of M998A2 series HMMWV's and the M1113/M1114/M1123 vehicles in the family, completely disconnect the batteries.

These vehicles have a dual voltage system. That means disconnection both negative battery cables, not just one. If you attempt electrical system work with even one negative cable still connected, you risk component damage and severe shock.

Disconnect the system using the info found in Para 4-73b, TM 9-2320-280-20-2 for the M998A2 series and M1123 trucks, and in Para 4-68b, TM 9-2320-387-24-2, for M1113/M1114 vehicles.

M 939 Series Tire Pressure Changes

The tire inflation data table in TM 9-2330-272-10 has changed. For all basic model M939 series trucks except the M945 inflation pressure is:

Highway, front tires	65 psi	Highway, rear tires	50 psi
Cross-country, front tires	45 psi	Cross-country, rear tires	35 psi
Mud, sand, snow, front tires	40 psi	Mud, sand, snow, rear tires	30 psi
Emergency, front tires	30 psi	Emergency, rear tires	25 psi

The information on page 1-25 in the 10 TM for M939A1 and A2 series trucks is correct, but you need to add a column for the M945 and the M945A1.

Highway, front tires	75 psi	Highway, rear tires	30 psi
Cross-country, front tires	45 psi	Cross-country, rear tires	25 psi
Mud, sand, snow, front tires	25 psi	Mud, sand, snow, rear tires	25 psi
Emergency, front tires	25 psi	Emergency, rear tires	25 psi

Check Those Vents

Always check the vents on transmissions, transfer cases and axles. Dirt, sand, moisture, grease and oil will collect on these vents and clogs them. When the breather clogs the component will not vent. Instead, the component overheats and the corresponding increase in pressure causes the seals to leak or blows the seals.

Always check these vents for clogging, cracks or dents during your preventive maintenance checks and especially when you have a complaint of seal leakage. Make sure you remove, clean and inspect the vent at least annually and replace the vent if damaged.

HMMWV Differential Wind Up

Differential wind up could be the cause of that grinding and popping noise you hear while turning. Wind up can occur any time the vehicle is operated with the transfer locked. The front and rear differentials rotate at the same speed but during turns on dry hard roads the locked transfer prevents the differential from allowing the wheels to spin at different speeds. That causes torque buildup, which you hear as grinding or popping from the rear end.

In off road conditions, wheels can slip and the wind up doesn't cause a problem. To correct the noise you can jack the wheels off the ground to relieve the torque or driving the vehicle backwards for a short distance will unwind the differential and stop the noise.